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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/702,280	10/30/2000	Yonglin Huang	NFCS-00-016	3667

7590 04/09/2002

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EXAMINER

CURTIS, CRAIG

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 04/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/702,280

Applicant(s)  
Huang et al.

Examiner  
Craig Curtis

Art Unit  
2872



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Jan 17, 2002
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 2-6 and 22-37 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-6 and 22-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 20) ☐ Other:

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## *DETAILED ACTION*

### *Disposition of the Application*

- Pursuant to Applicants' request to amend claim 2, made in Amendment B, filed on January 17, 2002 and made of record in the file on January 24, 2002, claim 2 has been amended. Claims 2-6 and 22-37 are pending in the application, claims 1 and 7-21 having been canceled by Preliminary Amendment A, made of record in the file on May 14, 2001.
- The rejection of claims 2-6 under 35 U.S.C. 112, first paragraph, is hereby withdrawn in response to Applicant's amendment.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- I. Claims 2-6 and 22-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng (U.S. 6,014,256).

The Cheng patent teaches, in Figure 3a, all of the claimed elements EXCEPT FOR the use of two lenses (a collimating and focussing lens), the use of polarization maintaining fibers and the specific size ranges of the device. As seen, there is a first fiber (16c) defining a first axis, a second fiber (16a) defining

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a second axis, and a third fiber (16b) defining a third axis which is parallel to and spaced apart from the second axis. There is also a focusing lens (32) and a birefringent walk-off crystal (30) which has a first face adjacent to the lens and a second face in contact with the second and third fibers and at the focal point of the focusing lens. In terms of the fibers, it is believed at least obvious, if not inherent, that the Cheng device uses polarization maintaining fibers, since said device is used as a polarization beam splitter, which necessitates the exiting fibers (16a, 16b) maintaining the polarization states of the exiting beams. As to the sizes, column 3, line 55 describes the crystal (30) of Fig. 3a as being 1/50th the size of the conventional splitter/combiner device. It is believed that this value, while not specifically given in Cheng, is inherently within those value ranges set forth in Applicants' claims 4-6, 24-26, 31-32, and 36-37.

As for the use of two lenses, one for collimating and one for focusing, it would have been obvious to one having ordinary skill in the art to have used such a two-lens design in place of the single lens (32) of Cheng, for at least the purposes of allowing additional space in which to effect the correction of alignment errors in said device. Indeed, when producing collimated light from the first fiber (16c), the placement along the first axis need not be so exact in terms of the focusing lens in order to maintain the position of the focused beams on the second and third fibers.

### *Response to Arguments*

2. Applicants' arguments filed 17 January 2002 have been fully considered but they are not persuasive.

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Applicants argue that the Cheng reference actually teaches two, not three, optical axes. The Examiner respectfully disagrees.

In identical fashion with Applicants' invention, as set out in both the specification and the drawings of the instant application, Cheng teaches an optical polarization beam splitter that comprises, inter alia, three optical axes. Indeed, Applicants are invited to compare Fig. 1 of Cheng with Fig. 2A or 2B of the instant application. As can be seen, the first, second, and third optical axes are identically oriented and displaced with respect to one another as set forth in Applicants' claims.

### *Conclusion*

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

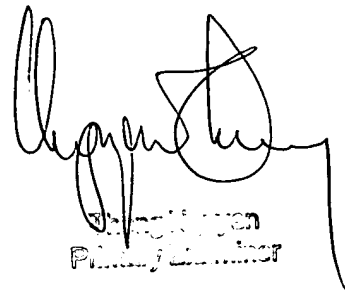
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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### *Contact Information*

4. Any inquiry concerning this or earlier communications from the examiner should be directed to Craig Curtis, whose telephone number is (703) 305-0776. The facsimile phone number for Art Unit 2872 is (703) 308-7721.

Any inquiry of a general nature regarding the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-0956.



Craig H. Curtis  
Primary Examiner



Craig H. Curtis  
Group Art Unit 2872  
5 APRIL 2002